

2. An Account of two Collections of Lepidoptera recently received from Somali-land. By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.

[Received August 5, 1885.]

(Plate XLVII.)

At the meeting held on the 4th November, 1884, I had the pleasure of bringing before the Society an account of a collection sent to the British Museum by Major J. W. Yerbury from Aden<sup>1</sup>.

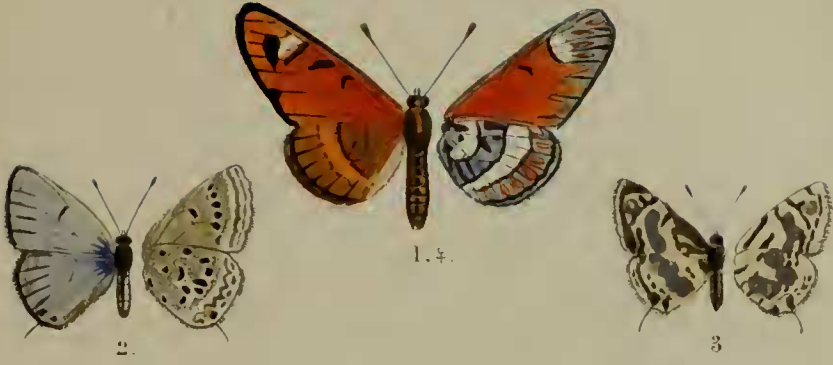
Along with his Aden collection Major Yerbury forwarded to me a small but interesting series collected by him in the spring of 1884 on the Somali coast.

During the present year a second much larger series, collected by Messrs. J. G. Thrupp, Lort-Phillips, and James during an expedition southwards into the interior of Somali from Berbera, was presented by them to the Museum. These Lepidoptera, as I am assured by Mr. Lort-Phillips, were principally obtained upon a plateau commencing at about forty miles from the coast and extending due south for about 200 miles, the time of collecting being about four months.

Since the two collections together contain examples of 55 species, some idea of the geographical relationships of the fauna can be gained from them; the annexed table shows that the relationship to Aden is very strongly marked, no less than twenty-one species being identical and three nearly allied to Aden forms; next in order comes Abyssinia, twelve species identical and nine allied; thirdly, Kilimanjaro, ten, and probably eleven, species identical and three allied; lastly, Natal, nine or ten species identical and fourteen allied.

Omitting from the fifty-five species seven forms not known to exist elsewhere and to which allied types are not yet recorded (so far as I have been able to discover), nearly half the known Butterflies and Moths of Somali are Aden species, a quarter Abyssinian, a fifth Kilimanjarian, and a fifth Natal. The allied or representative types I consider of less importance, especially in the case of so well-worked a locality as Natal when compared with localities so little known as Kilimanjaro or even Abyssinia, from both of which not a few types closely related to those of Somali may confidently be expected to come. On the other hand, if the nineteen new species in these collections be omitted from our calculations, nearly four sevenths of the remainder are identical with species found in Aden. I think, therefore, it may fairly be concluded that the Lepidopterous fauna is essentially Arabian in character; but, since the species of Arabia have a much closer affinity to those of Africa than Asia, it seems reasonable to conclude that they have for the most part immigrated from the African coast and originated in Egypt, Nubia, Abyssinia, and Somali-land.

<sup>1</sup> See P. Z. S. 1884, p. 478.



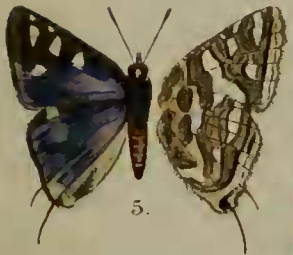
1. ♀

2.

3



4.



5.



6



7. ♀



8.



9



12



10



11.

M. Horner-Fisher del. et lith.

Mintern Bros. imp.

NEW BUTTERFLIES FROM SOMALI-LAND.



Table showing the relationship of the Lepidoptera of Somali to those of Aden, Abyssinia, Kilima-njaro, and Natal.

When the species is identical an asterisk \* is used, but if a closely allied species replaces it a dagger † is substituted.

	Aden.	Abyssinia.	Kilima-njaro.	Natal.
<i>Limnas dorippus</i> .....	*			
— <i>klugii</i> .....	*	*	*	
<i>Ypthima asterope</i> .....	*	†		
<i>Neocænura duplex</i> .....				
<i>Precis limnoria</i> .....	.....	*	*	
<i>Junonia crebrene</i> .....	*	*	*	*
<i>Hypanis ilithyia</i> .....	*	*	.....	*
— <i>castanea</i> .....	*	*?	.....	†
<i>Hamanumida dædalus</i> ...	.....	*	*	
<i>Acræa chilo</i> .....	.....	.....	*	
<i>Acræa bræsia</i> .....	.....	.....	*	
<i>Acræa mirabilis</i> .....				
<i>Polyommatus bæticus</i> ...	*	*	*	*
<i>Catochrysops asopus</i> .....	*	.....	.....	*
— <i>naidina</i> .....				
— <i>fumosa</i> .....	.....	.....	.....	†
— <i>lois</i> .....				
<i>Azanus zena</i> .....	*	†		
— <i>jesous</i> .....	.....	*	.....	*
<i>Tarucus pulcher</i> .....	*	.....	.....	*
— <i>sybaris</i> .....	.....	*		
— <i>theophrastus</i> .....	*			
<i>Castalius lactinatus</i> .....	.....	†		
<i>Hyreus lingeus</i> .....	.....	.....	.....	*
<i>Spindasis somalina</i> .....	.....	.....	.....	†
<i>Chloroselas esmeralda</i> ...				
<i>Hypolycæna umbrosa</i> ...				
<i>Iolaus glaucus</i> .....				
<i>Terias zoe</i> .....	.....	.....	*	*
<i>Teracolus dynamene</i> .....	*	.....	.....	†
— <i>ocellatus</i> .....	†	†		
— <i>chrysonome</i> .....	.....	.....	*	
— <i>protomeia</i> .....	*	*		
— <i>heliocaustus</i> .....	†			
— <i>præclarus</i> .....	.....	†	.....	†
— <i>eupompe</i> .....	*	†		
— <i>dedecora</i> .....				
— <i>complexivus</i> .....	.....	.....		†
— <i>thruppii</i> .....	†			
— <i>jamesii</i> .....	.....	.....	.....	†
— <i>phillipsii</i> .....	.....	†	.....	†
— <i>nouna</i> .....	*			
<i>Catopsilia hyblæa</i> .....	*			
— <i>aleurona</i> .....	*	*		
<i>Belenois lordaca</i> .....	*	†		
<i>Synchlœ distorta</i> .....	.....	.....	†	†
<i>Herpænia melanarge</i> ...	.....	†	.....	†
<i>Nepheronia arabica</i> .....	*	.....	†	†
<i>Hesperia anchises</i> .....	*	.....	*?	
<i>Cyclopides cheles</i> .....	.....	.....	.....	†
<i>Carterocephalus callicles</i> .....	.....	.....	.....	†
<i>Thanaos djælælæ</i> .....	*	.....	*	*
<i>Eusemia thruppii</i> .....	.....	.....	.....	†
<i>Saturnia oubie</i> .....	.....	*		
<i>Heliothis peltigera</i> .....	.....	.....	.....	*?

## NYMPHALIDÆ.

## 1. LIMNAS DORIPPUS.

♂ ♀. *Euplœa dorippus*, Klug, Symb. Phys. pl. 48. figs. 1-4.

♂. "Inland from Berbera, April or May 1884."—*Yerbury*.

If my views of the relationship of this species to *L. chrysippus* and allies is correct, it will probably be found that typical *L. dorippus* does not range inland to any very great distance from the Somali coast, but that its place is occupied by its Indo-African representative. So far the two series before me fulfil my expectations; that received from Major Yerbury containing one male of each form, whereas that collected by Mr. Thrupp contains three pairs of the Indo-African form (for which I propose the name of *L. klugii*) and none of *L. dorippus*. Mr. E. Lort-Phillips assures me, however, that three of the specimens were obtained within eighty miles inland from Berbera.

## 2. LIMNAS KLUGII.

♂. *Euplœa dorippus*, var., Klug, Symb. Phys. pl. 48. fig. 5.

♂. "2nd April, 1884."—*Yerbury*.

♂ ♀. Inland, south of Berbera.—*Thrupp*.

This is clearly the prevalent *Limnas* in Somali-land; *L. chrysippus* and *L. alcippus* having, apparently, entirely disappeared, and *L. dorippus* being scarce and in all probability confined to the eastern coast. It therefore has been necessary to give a name to this form, since to speak of it as *L. dorippus* is not in accordance with actual fact.

## 3. YPTHIMA ASTEROPE.

*Hipparchia asterope*, Klug, Symb. Phys. pl. 29. figs. 11-14 (1832).

Four specimens, three of them a good deal worn, showing that they had been long on the wing.

## NEOCÆNYRA, gen. nov.

Aspect of *Pseudonympha*; neuration of *Ypthima*, excepting that only the costal vein is swollen at the base; palpi and antennæ of *Cœnyra*, from which, however, it is at once distinguished by the form of the discoidal cell of primaries, which does not project in front as in *Cœnyra*, so that (as in *Ypthima*) the second subcostal branch is emitted at a considerable distance beyond the cell: it also differs in having no trace of the large oval blackish brand which occurs on the inner border of the primaries in the male of *Cœnyra*.

## 4. NEOCÆNYRA DUPLEX, sp. n.

Upper surface smoky greyish-brown, body darker than the wings, the tegulæ slightly rufous in front in the male, wholly rufous in the female: primaries of both sexes with a large pyriform rufous patch<sup>1</sup> covering the anterior part of the disk and enclosing a subapical

<sup>1</sup> This patch is partly greyish in front in the male, but its outline is still clearly visible.

bipupillated orange-zoned ocellus, oval with bluish pupils in the male, rounded with white pupils in the female; a slender blackish submarginal line: secondaries with two unipupillated, rufous-zoned, black, rounded ocelli on the median interspaces; female with a larger, but less widely zoned, indistinct ocellus on the first subcostal interspace and a small ocellus near the anal angle; submarginal line as in the primaries. Below, the primaries in the male are as above, but in the female the rufous patch is outlined with darker rufous and within this line, towards apex, it becomes grey; there is also a spot at the end of the cell and an oblique line in the cell of the same colour, and the submarginal line is rufous; the secondaries in both sexes are rufous at base of costa, those of the male have five ocelli, black, unipupillated, with rufous-edged fulvous irides; one of these is subapical, two on the median interspaces, and two, smaller, on the interno-median interspace; in the female there are four ocelli, there being only one on the interno-median interspace; there are, however, two red dots or rudimentary ocelli between the first and second true ocelli; the entire base of the secondaries is rufous, and there are two irregularly angulated parallel rufous lines which do not exist in the male, also a dot in the cell and an oblique dash at its extremity; the male has two blackish submarginal lines and the female two red ones; pectus of female red at the sides. Expanse of wings, ♂ 33 mm., ♀ 38 mm.

One pair only.—*Thrupp*.

#### 5. PRECIS LIMNORIA.

*Vanessa limnoria*, Klug, Symb. Phys. pl. 48. figs. 6, 7 (1845).

*Vanessa naib*, Guérin, in Lefebvre's Voy. Abyss. vi. pl. 11. fig. 2 (1849).

One female, somewhat shattered.—*Thrupp*.

#### 6. JUNONIA CREBRENE.

*Junonia crebrene*, Dunning, Trans. Ent. Soc. 1870, p. 524 (1870).

Three females.—*Thrupp*.

#### 7. HYPANIS ILITHYIA.

*Papilio ilithyia*, Drury, Ill. Exot. Ent. ii. pl. 17. figs. 1, 2 (1773).

♂ ♀.—*Thrupp*.

#### 8. HYPANIS CASTANEA, sp. n.

♂. Coloration above of *H. ilithyia* and allies, but the oblique black patch at the end of the cell of primaries widely separated from the oblique band which starts from inner margin and continuous with the submarginal band instead; the latter band also narrower; the subapical costal patch cuneiform, veins and margins very slenderly black; secondaries without the central series of black spots, and with the discal band of only half the width, leaving the submarginal spots large and almost quadrate: primaries below differing much as above; secondaries with the basal, præmedian, and discal

bands dull reddish clay-brown; the last-mentioned band, however, with its outer two fifths dull chocolate, edged on both sides with black and with no trace of white spots; the white intermediate bands and the spots beyond the discal band cream-coloured instead of pure white; marginal border dull ochreous crossed by black veins; marginal black-edged stripe dull sordid whitish, its inner edge not undulated. Expanse of wings 52 millim.

One male, taken on the 29th December.—*Thrupp*.

This is probably the *H. anvatura* of Lefebvre (*Voy. Abyss., Zool.* vi. p. 380), but not of Boisduval.

A pair of this species, from Aden, has recently been sent to us by Major Yerbury, in which the discal black band on the secondaries is slightly broader than in the Somali male, and the discal band below has its outer half dull chocolate-coloured; but in every other respect they correspond with it. The species comes nearest to *H. cora*, Feisth., but is larger, brighter in colouring above, has narrower black bands, and much wider submarginal spots on the secondaries: on the under surface it is more clearly coloured throughout, the external area of primaries is not red-brown, and the bands on the secondaries are decidedly paler, including the marginal stripe, which in *H. cora* is dull brown; the central white band is also more angular.

#### 9. HAMANUMIDA DÆDALUS.

*Papilio dædalus*, Fabricius, *Syst. Ent.* p. 482, n. 174 (1775).

More than eighty miles S. of Berbera.—*Thrupp*.

One broken example, of the variety with clay-coloured under surface, upon which the white spots are extremely ill-defined. Every intergrade between this, the true *H. dædalus*, and the *H. meleagris* of Cramer, exists in Abyssinia, and probably in all localities where the species occurs: any attempt to separate the two extremes, as some Lepidopterists have attempted to do, into two species, will probably be futile.

#### 10. ACRÆA CHILO.

*Acraea chilo*, Godman, *P. Z. S.* 1880, p. 184, pl. xix. figs. 4, 5.

Dura, December 23rd.—*Lort-Phillips*.

Two male examples were obtained.

#### 11. ACRÆA BRÆSIA.

*Acraea bræsia*, Godman, *P. Z. S.* 1885, p. 538, n. 4.

One male, two females.—*Lort-Phillips*.

I cannot see sufficient grounds for separating this from the Kilimanjaro species, the only differences being that the outer margins of the wings are a little less arched and the spots beyond the cell of primaries rather less oblique; characters which would probably prove to be inconstant if one possessed a good series.

#### 12. ACRÆA MIRABILIS, n. sp. (Plate XLVII. fig. 1.)

Wings above bright tawny with rose-coloured shot (probably

rose-red in life); extremities of the veins black: primaries with a black spot at the end of cell in the male; the female has a black >-shaped marking in the cell and a black dash at the end; both sexes have an oblique subapical oval white patch on a black ground: secondaries, owing to their transparency, showing a band just before the middle; in the females, however, part of the black outer edge of this band actually exists on the upper surface; this sex also shows a small spot in the cell and a larger spot divided by the upper discocellular veinlet; outer border rather narrowly black, with a paler central stripe: head and thorax tawny, the latter sprinkled with whitish scales; abdomen of male white banded with sulphur yellow, of the female tawny, banded with black and edged with yellow. Primaries below soft tawny, the male with two black discoidal spots, the female with only the terminal black dash of the upper surface; an oblique oval subapical white patch edged internally with black; beyond it and towards the outer margin throughout the veins are black broadly bordered with ash-grey and separated towards the apex solely by short black internervular dashes; secondaries white; basal area spotted with rose-colour; a black subbasal transverse dash from the costal margin to the cell and two or three black subbasal spots; an ash-grey subangulated central band, spotted with tawny and rose-red, margined on both sides with black and enclosing a black spot; veins upon external area black; the latter in the male has no decided inner edge, but is of a pale buff tint, shading into white towards outer margin; in the female, on the other hand, it is sharply defined by a black line and is of a silver-grey tint; in both sexes this area encloses a series of internervular pyramidal orange dashes and is bounded externally by two black lines. Body of male below white, palpi and legs in front buff, sides of pectus spotted with rose-red; body of female below entirely different, the pectus being white, spotted with golden buff similar to the colour of the palpi and front of legs, and the venter golden yellow with two central longitudinal black lines. Expanse of wings, ♂ 37-43 millim., ♀ 47 millim.

Three males. Bunder Maria, 27th April, 1884.—*Yerbury*.

One female. More than 80 miles S. of Berbera.—*Thrupp*.

This marvellously distinct and pretty little species belongs to the group to which the name *Telchinia* has been given, but the banding of the under surface is quite unique.

#### LYCÆNIDÆ.

##### 13. POLYOMMATUS BÆTICUS.

*Papilio bæticus*, Linnæus, Syst. Nat. i. 2, p. 789, n. 226 (1767).

♂ ♀.—*Thrupp*.

##### 14. CATOCHRYSOPS ASOPUS.

*Lycæna asopus*, Hopffer, Ber. Verh. Ak. Berl. 1855, p. 642; Peters' Reise n. Mossamb., Zool. v. p. 410, pl. 26. figs. 13-15 (1862).

One male, var.—*Thrupp*.



15. *CATOCHRYSOPS NAIDINA*, sp. n. (Plate XLVII. fig. 2.)

Wings above pale silvery azure, the primaries slighted tinted at the base with green and the secondaries with cobalt; extremities of veins, outer margins, and base of fringes grey-brown; tips of fringes white; primaries with a well-defined brown crescent at extremity of discoidal cell; secondaries with a small blue-speckled black spot above the tail and faint indications of other submarginal spots; body much as usual; under surface of wings silver-grey; markings arranged nearly as in *C. conguensis* of Mabille (Grand. Hist. Mad., Lep. pl. 28. fig. 8<sup>1</sup>), but with the discocellular lunule and series of discal spots of the primaries black, the three spots of the subbasal series of secondaries and the first and last of the discal series also black, the other spots of the discal series more elongated and with two orange-zoned black spots, with metallic silvery-blue streak, instead of one only towards anal angle; this species also has a well-defined tail. Expanse of wings 31 millim.

One male.—*Thrupp*.

Although I have compared this with M. Mabille's figure, on account of the similarity in the pattern of the under surface, I am much mistaken if *L. conguensis* is anything but the ordinary male of *L. asopus*, of which M. Mabille only figures the female.

16. *CATOCHRYSOPS FUMOSA*, sp. n.

Above smoky-brown, slightly sprinkled with blue scales at base; fringe black at base but white externally; secondaries with three indistinct golden-ochreous spots, the central one brightest and enclosing a black spot edged with lilac scales, near the anal angle; body brown with cupreous reflections; wings below stone-grey, marked much as in *C. asopus*, but the discal series of primaries consisting of only five spots and arranged in an arc; secondaries with the five spots nearest to the base black, as in the preceding species; no tail appears to have existed at any time. Expanse of wings 38 millim.

Two males.—*Thrupp*.

We have a Natal species allied to this, but I have not hitherto been successful in identifying it.

17. *CATOCHRYSOPS LOIS*, sp. n.

♂. Bronze-brown, rather dark, the wings with the interno-basal area broadly lilac; secondaries with a small black spot just in front of the tail, edged externally with pure white, a second short white

<sup>1</sup> I cannot mention this book without expressing regret that the beautiful plates should have been entrusted to a Lepidopterist so unskilled as to be unable to tell the sexes of specimens before him; so that on the same plate (pl. 23) I see the males of two distinct species figured as sexes of "*Nymphalis*" *antamboulou*; on plate 38 a female *Catopsilia* (*C. rufosparsa*) is figured as a male, and (on the same plate) the males of two species, so much alike that nobody could question their being nearly allied, are placed one in *Eronia*, the other in *Callidryas*. I will say no more here, beyond the fact that a number of *Aden* species are wrongly introduced, some of them renamed, and the male of one of them figured along with a Madagascar female belonging to another subgroup of the genus.

line at the extremity of interno-median area; a blackish marginal line; fringe partly whitish. Wings below pale stone-grey, with markings below nearly as in *C. pandava* of India, the primaries having a white-edged brown spot at the end of the cell; a discal band similarly coloured, oblique from costa to second median branch, then a little receding and divided below the second median into two sections; the usual ocelloid marginal spots composed of alternate white and brown lunules and spots; secondaries crossed near the base by three white-edged black spots, that on costa largest; a white-edged brown discocellular lunule; an arched and somewhat sinuous discal series of white-edged spots, the first on costa black, the others slightly separated from it brown, the series almost interrupted below the second median branch; the usual marginal ocelloid spots bounded internally by broad white crescents, the two nearest to the anal angle black: body below white. Expanse of wings 25 millim.

One male. Bunder Maria, 27th April, 1884.—*Yerbury*.

I have been unable to find any described species at all closely allied to this; the nearest species, though wholly differing on the upper surface, is *C. pandava*, but even on the under surface, though agreeing in general pattern, the outline of the markings does not correspond in detail; the anal ocelli also are simply represented by black spots, upon each of which, with the help of a lens, I discovered a single silver scale. The venter in the type is tinted with gamboge-yellow, but I believe that it is stained; if natural, this would be a most unusual colour for any genus of the group allied to *Lycæna*.

#### 18. AZANUS ZENA.

*Lycæna zena*, Moore, P. Z. S. 1865, p. 505, pl. 31. fig. 9.

One male.—*Thrupp*.

#### 19. AZANUS JESOUS.

*Polyommatus jesus*, Lefebvre, Voy. Abyss. vi. p. 383, pl. 11. figs. 3, 4 (1847).

♂ ♀. December 23rd.—*Thrupp*.

#### 20. TARUCUS PULCHER.

*Lycæna pulchra*, Murray, Trans. Ent. Soc. 1874, p. 524, pl. 10. figs. 7, 8.

♂ ♀. December 23rd.—*Thrupp*.

#### 21. TARUCUS SYBARIS?

*Lycæna sybaris*, Hopffer, Ber. Verh. Ak. Berl. 1855, p. 642, n. 19; Peters' Reise n. Mossamb., Zool. v. p. 408, pl. 26. figs. 6-8 (1862).

One male. Duder, 26th April, 1884.—*Yerbury*.

The single example obtained differs very slightly from Hopffer's figure, and is apparently referable to the above species.

## 22. TARUCUS THEOPHRASTUS.

*Hesperia theophrastus*, Fabricius, Ent. Syst. iii. 1, p. 281, n. 32 (1793).

*Lycæna theophrastus*, Lucas, Expl. Alg., Zool. iii. pl. 1. fig. 6 (1849).

♂ ♀. December 23rd.—*Thrupp*.

## 23. CASTALIUS LACTINATUS, sp. n. (Plate XLVII. fig. 3.)

Allied to *C. cretosus* of Abyssinia. Milk-white; basal markings above as in *C. carana* and *C. cretosus*; external border similar to that of *C. cretosus*, but with larger subapical white spots, with a marginal series of small white spots and shining white-tipped fringe: secondaries with a discal series of six small blackish spots close to the external border, the first two confluent and separated by an interval from the others; external borders bounded internally by a black-brown stripe almost parallel to outer margin and emitting spurs along the veins to the outer margin; between the veins a submarginal series of differently formed black spots, that above the tail being large; marginal line black; tail black, tipped with white: under surface milk-white, all the markings slender and sharply defined; otherwise formed as in *C. calice*, excepting that the whole of the submarginal spots on the primaries, the first and fourth on the secondaries, and the short band across the end of the cell of these wings are wholly absent. Expanse of wings 27 millim.

One female.—*Thrupp*.

## 24. HYREUS LINGEUS.

*Papilio lingeus*, Cramer, Pap. Exot. iv. pl. 379, F, G (1782).

♂ ♀.—*Thrupp*.

## 25. SPINDASIS SOMALINA, sp. n. (Plate XLVII. fig. 5.)

Allied to *S. ella* from Natal, but considerably larger; the upper surface with much more brilliant ultramarine-blue shot, and with the spots on the primaries smaller and partly white in the male and pure white in the female instead of ochreous; secondaries more elongated: primaries below snow-white excepting the basal discoidal patch, which is pale buff and encloses two bright metallic plumbageous spots; bands arranged as in *S. ella* excepting that there is a continuous submarginal band (whereas in *S. ella* there are only two short sections, one at costa and one in the middle); all the bands clay-coloured and enclosing series of plumbageous dashes; external border pale buff, excepting towards the external angle, where it becomes gradually white, intersected by a black line and edged externally with black; fringe grey-brown: secondaries pale buff with the exception of central part of the costal half, which is pure white; markings nearly as in *S. ella*, but the subbasal spots more elongated and therefore contiguous, and the bands broader; all these markings clay-coloured, with central bright plumbageous or silvery streaks; external border pale buff, varied with cream-colour and intersected

by a black line ; marginal line and fringe as in primaries ; anal angle creamy white, spotted with black and silver ; a large black spot at the angle ; tails golden-orange at base, otherwise black with terminal white fringe. Thorax above slaty-grey, collar brown, head white, abdomen clay-brown banded with white. Below, pectus white, legs yellowish ; venter white, with a central interrupted clay-brown streak. Expanse of wings, ♂ 29 millim., ♀ 32-35 millim.

♂ ♀. Less than 80 miles S. of Berbera.—*Thrupp*.

♀. Bunder Maria, 27th April, 1884.—*Yerbury*.

#### CHLOROSELAS, gen. nov.

Allied to *Spindasis*; of the same form. Primaries with a black patch of thickened scales at the end of the cell and at base of second and third median branches ; costal vein extending to second third of costal margin ; subcostal with only three branches, the first emitted at some distance before the end of the cell, the second and third emitted together from a long footstalk, and terminating upon the costa just before the apex ; upper radial emitted from the anterior angle of the cell, lower radial from the centre of the discocellulars, which are transverse ; second and third median branches emitted near together ; secondaries apparently with only one tail ; neuration as in *Spindasis* : palpi broader, more curved, and with shorter terminal joint than in *Spindasis* ; antennæ more slender and with more abruptly formed club ; anterior legs more slender. Type, *C. esmeralda*.

#### 26. CHLOROSELAS ESMERALDA, sp. n. (Plate XLVII. fig. 4.)

Primaries above with the basi-internal half, excepting the costal border, brilliant flashing emerald-green, changing in certain positions to purple and in others to greyish flesh-colour, the basal half of costa constantly of the latter colour, apical half smoky-brown ; a black patch at the end of the cell : secondaries brilliant green, with the costal border rather broadly smoky-brown, abdominal border pale bronze-brown ; anal lobe golden-orange, spotted on each side with black and silver. Body above blue-black ; head whitish, palpi white, antennæ annulated with white, club tipped with orange, abdomen banded with whitish. Wings below pale sandy testaceous, the wings spotted all over with embossed silver and black : primaries with whitish internal area ; a silver spot near the base of the costal border, about six silver spots in the cell, an irregular transverse series of six beyond the cell, two confused discal series of silver and black spots ; a submarginal series of partly black-edged silver spots and a nearly marginal series of black dots ; fringe white : secondaries with four or five silver spots at the base ; a series of four across the basal third followed by slender black dashes, then a forked discal series of silver spots intermixed with six black spots ; submarginal series and dots as on primaries ; orange, black, and silver lobe as above : body below white. Expanse of wings 21-22 millim.

Bunder Maria, 30th April, 1884.—*Yerbury*.

Major Yerbury obtained three male specimens of this lovely little novelty.

27. *HYPOLYCÆNA UMBROSA*, sp. n. (Plate XLVII. fig. 6.)

Nearest to *H. cæculus*; primaries above smoky grey-brown, with a large patch of lavender occupying the basi-internal half; secondaries lavender, costal border and a patch at apex smoky grey-brown; submarginal blackish spots and metallic green anal spots as in the female of *H. cæculus*. Under surface white clouded with pearl-grey: primaries with an orange brownish transverse dash at the end of the cell; a narrow bent dark grey band shot with bright cupreous beyond the cell from costa almost to the submedian vein; a submarginal dark grey stripe tapering from submedian vein almost to the costa, and trisinate at its anterior extremity; fringe white, spotted with dark grey: secondaries with a bisinuate subbasal grey band brilliantly shot with cupreous orange, a darker oblique dash at the end of the cell, and a zigzag stripe from costa to abdominal margin beyond the cell; a submarginal dark grey stripe tapering from costa to abdominal margin, where it unites with a marginal line which extends almost from the base along this margin; a rounded black spot near the extremity of the first median interspace, and a second upon a metallic green streak at anal angle; a slender black marginal line extending into the tails; fringe white. Expanse of wings 32 millim.

One specimen only was obtained.—*Thrupp*.

28. *IOLAUS GLAUCUS*, sp. n.

Nearest to *I. belli*: primaries above blackish with a large interno-basal patch of bright violet, occupying about half the wing; secondaries blackish grey, slightly paler towards the abdominal border, which is almost entirely white; centre of wing densely irrorated with bright violet; a submarginal series of spots, black internally but lilacine whitish externally; a black anal spot bordered internally with bright metallic emerald-green and yellow, and probably a similar spot between the tails<sup>1</sup>; fringe white; a velvety-black patch of thickened scales at base of subcostal branches: wings below chalky-white, with two strongly marked jet-black stripes (the inner one interrupted by the veins on the primaries), and the margin black; the stripes formed as in *I. belli*; the black, green, and yellow anal spot larger than above; a little marginal dash of the same colours above the lobe. Expanse of wings 31 millim.

Duderi, 26th April, 1884.—*Yerbury*.

From any less interesting locality I should hesitate to make a type of a specimen with the secondaries damaged; it is, however, a very distinct species, and there can be little doubt as to the pattern upon the missing parts.

<sup>1</sup> The secondaries unfortunately have a piece broken out of them on both sides, but some metallic green scales are visible at the edge of the broken part on one side, showing that, at any rate, a green spot, if not a black one, exists.

## PAPILIONIDÆ.

## 29. TERIAS ZOE.

*Terias zoe*, Hopffer, Ber. Verh. Ak. Berl. 1855, p. 640, n. 5 ; Peters' Reise n. Mossamb., Zool. v. p. 369, pl. 23. figs. 10, 11 (1862).

One male.—*Thrupp*.

## 30. TERACOLUS DYNAMENE.

*Pontia dynamene*, Klug, Symb. Phys. pl. 6. figs. 15, 16 (1829).

Var.? *Teracolus carnifer*, Butler, P. Z. S. 1876, p. 138, n. 42, pl. vii. figs. 8, 9.

One male of each form.—*Thrupp*.

M. Mabille has recently figured as the female of this species (which I am satisfied is not found in Madagascar) that sex of Staudinger's recently named Madagascar species *T. castalis*, placed by the latter author in the obsolete genus *Idmais*. Dr. Staudinger is frequently at fault in his generic identifications, though most often his error consists in associating genera utterly different in structure, and whose chief resemblance is one of external facies (as is the case with *Amyntia clorinde*, described and figured in Dr. Staudinger's very pretty book as a *Gonepteryx*), whereas the three groups *Idmais*, *Callosune*, and *Teracolus*, which, from insufficient material, Dr. Staudinger believes to be distinct genera, do not exhibit a single structural distinction, and, not only that, our collection of these butterflies, which is beyond all question by far the most perfect in the world, shows an almost complete transition, through numbers of nearly allied local forms, from the most *Colias*-like *Idmais*-form to the extremest type of *Callosune*-form almost resembling a *Leptidia*. It is easy to figure selected species and to say that they are members of different genera ; it is just as easy to assert without evidence that intermediate forms have been described from single specimens and therefore may be ignored ; but facts remain as they were,—genera founded on good structural characters will alone stand.

## 31. TERACOLUS OCELLATUS, sp. n.

♂. Exactly intermediate between *T. protractus* and *T. phisadia* : primaries only differing from the latter in the straight inner edge to the blue-grey basal area, which agrees with that of *T. protractus*, and in the distinctly white-pupilled black spot at the end of the cell ; secondaries like *T. protractus*, excepting that the abdominal half from the base to the border is white as in *T. phisadia* : on the under surface the wings are almost exactly as in the latter species. Expanse of wings 39 millim.

One male.—*Thrupp*.

This is one of the most interesting species in the collection, since it is exactly intermediate between the salmon-coloured *T. protractus* and the salmon and white *T. phisadia*. I have long been looking out for this intergrade, as I was satisfied that it must exist ; I have also no doubt that a species intermediate between *T. phisadia* and

*T. vestalis* will ere long be discovered. *T. phisadia* (from Aden evidently) has been redescribed and figured by M. Mabille under the name of *Idmais philamene*; the form is that figured by Klug as *Pontia arne*.

### 32. TERACOLUS CHRYSONOME.

*Pontia chrysonome*, Klug, Symb. Phys. pl. 7. figs. 9-11 (1829).

♂ ♀. Bunder Maria, 27th-30th April, 1884.—*Yerbury*.

♂ ♀. 2nd January.—*Thrupp*.

The species appears to be tolerably common in Somali-land; it is quite constant in coloration and markings; as may be seen from Klug's figures, the males only have the base of the wings bluish and white.

### 33. TERACOLUS PROTOMEDIA.

*Pontia protomedia*, Klug, Symb. Phys. pl. 8. figs. 13, 14 (1829).

♂ ♀. Dura, December 23rd.—*Thrupp*.

As usual, this species has not come in good condition; no specimen hitherto sent to the Museum has been quite perfect. *T. protomedia* is another of the Aden species introduced into the fauna of Madagascar by M. Mabille; it is evident that some collection made at Aden has been forwarded to him as from Madagascar. The Lepidoptera of Arabia are peculiar; they do not, in all probability, range further southwards than Somali, and even there they are frequently replaced by allied but distinct species; that they should turn up again, in no respect modified, in Madagascar, is quite out of the question.

### 34. TERACOLUS HELIOCAUSTUS, sp. n. (Plate XLVII. figs. 8, 9.)

Exactly intermediate between the variety *T. miriam* of *T. pleione* and *T. acaste*, in size, pattern, and colouring. The male has the apical border of *T. miriam*, but the orange area is confined by the discoidal cell on the anterior half of the wing, and on the posterior half only differs from that on the primaries of *T. acaste* ♂ in extending to the base; the secondaries have the orange costal area of *T. acaste*, but at the base it fills the discoidal cell and suffuses the interno-median area almost as much as in *T. miriam*; the black discocellular spot on the primaries is formed as in *T. acaste*: the under surface shows the orange basal area of *T. miriam*, but the ochraceous apical area of primaries and entire surface of secondaries of *T. acaste*. The female exhibits the pattern of *T. celestis* rather than of *T. acaste*; but the marginal spots are larger than in either; the costal and internal borders of primaries towards the base are dark greyish; the discoidal cell and the whole interno-median area, as far as the discal series of spots, are orange, which colour therefore does not extend quite so far outwards as in the male; on the under surface the pattern is the same as in *T. acaste* ♀, but the basi-internal half of the primaries is orange, the apical border ochraceous, and the secondaries yellow with diffused ochraceous external border and orange basi-

costal margin. Expanse of wings, ♂ 36–41 millim., ♀ 35–44 millim.

♂ ♀. Bunder Maria, 30th April, 1884.—*Yerbury*.

♂ ♀. Less than 80 miles S. of Berbera.—*Thrupp*.

I have fully expected to receive a species linking *T. miriam* to the *T. halimede* group for some years past; when we receive the male of *T. coliaenes*, I have no doubt it will prove to belong to the latter group, perhaps tending to link it to *T. abyssinicus*, *T. eris*, and *T. maimuna*.

*T. miriam* of Aden has been refigured, as from Madagascar, by M. Mabille under the new synonym of *Anthocharis eucheria*. *Anthocharis* is an obsolete name for the European genus *Euchloe*, which differs from *Teracolus* in neuration in having five subcostal branches instead of four to the primaries, and in the position of the upper radial, which is emitted from the inferior edge of the subcostal vein beyond the cell; these are points which prove *Euchloe* to belong to a different section of the subfamily from that to which *Teracolus* belongs.

The two forms of *T. pleione*, which scarcely differ and certainly interbreed, have now been described four and figured three times.

### 35. TERACOLUS PRÆCLARUS, n. sp. (Plate XLVII. fig. 7.)

Allied to *T. amina*, the male on the upper surface only differing in the greater width of the blackish border and the absence of marginal spots, the female differing also in its yellower colour (the base of the primaries and whole of secondaries up to the border being yellow); the blackish apical half of primaries irrorated with carmine, crossed by seven spots of this colour and with six marginal carmine dots: under surface entirely distinct from *T. amina*, the primaries with the basal three fifths of the discoidal cell cadmium-yellow, shading into lemon-yellow towards the costa and vermilion towards its outer extremity; female also with a broad submedian streak of vermilion, a round black spot at the end of the cell; a central white belt enclosing the black spot, beyond which the whole disk, with the exception of a triangular apical patch, is bright rose-red and crossed by an angular series of black spots; apical patch yellow and quadrid internally, dark ochraceous flesh-coloured externally; secondaries lemon-yellow, with the basi-abdominal area in the male yellowish flesh-coloured, and in the female bright gamboge-yellow; the external area ochraceous flesh-coloured, bounded internally by an angular lilacine brownish macular band enclosing a series of bright yellow crescents: body below whitish. Expanse of wings, ♂ 43 millim., ♀ 48 millim.

One pair, the male taken by Mr. Thrupp and the female by Mr. Lort-Phillips, who captured it with his fingers whilst it was hovering about the flowers of a *Mimosa* or similar shrub.

This is one of the most distinct, beautiful, and at the same time interesting species yet discovered. I have long been looking for evidence that *T. amina* and *T. celimene* are intermediate (as they appear to be) between the two groups to which the names



*Idmais* and *Callosune* were formerly given. *T. amina* has much of the pattern of *T. vesta* and its allies on the under surface, but both sexes correspond more nearly with the *T. ione* group on the upper surface; *T. pholoë*, from Lake N'Gami, is evidently a female allied to *T. amina*, but having two series of magenta spots across the black area of the primaries; it may even be a dimorphic form of the female of *T. celimene* from Abyssinia, which is described as having two series of yellowish-white spots across this area: all these have the "*Idmais*" type of marking on the under surface. On the other hand, the species from Somali, though on the upper surface much like *T. amina* and (evidently) *T. pholoë*, differs in having the under surface coloured more nearly as in *T. zoe* of Madagascar, a species intermediate in character between the *T. halimede* and *T. ione* groups, and thus links the so-called genera *Idmais* and *Callosune* at another point, proving that even in their pattern they are completely linked and interlocked beyond the possibility of separation.

### 36. TERACOLUS EUPOMPE.

*Pontia eupompe*, Klug, Symb. Phys. pl. 6. figs. 11-14 (1829).

Two male specimens.—*Thrupp*.

The males are chiefly distinguishable from the following by the magenta-shot colour upon the crimson apical patch, the usually much broader blackish inner border to this patch, and the more distinct markings on the under surface.

### 37. TERACOLUS DEDECORUS.

*Anthopsyche dedecora*, Felder, Reise der Nov., Lep. ii. p. 184, n. 177 (1865).

♂. Duderi, 26th April; Bunder Maria, 27th April.—*Yerbury*.

♂ ♀. Somali, 23rd December.—*Thrupp*.

Some examples have no series of discal spots across the secondaries on the under surface, whereas others are nearly as strongly marked as in *T. eupompe*. This appears to be an inconstant character in the present species, as one out of three males from Duderi has these markings obliterated, a second has them half across the wing, and the third has a complete series and much resembles males of *T. dulcis*; the tint of the under surface also varies as in *T. subroseus*.

### 38. TERACOLUS COMPLEXIVUS, sp. n.

♂. Upper surface almost exactly as in the male of *T. omphaloides*, differing in the orange instead of vermilion apical patch, and in the diffuse character of the posterior extremity of the black border. On the under surface it corresponds more nearly with the male of *T. theogone*, the apical area of primaries being precisely similar excepting that perhaps the red patch is a little more diffused; the secondaries are however decidedly paler, of a clear pink colour with a broad grey costal border extending from the base to the brown costal spot; the discal brown stripe is well defined but the spot at the end of the cell extremely minute. Expanse of wings 45 millim.

One male. January 2nd.—*Thrupp*.

This is an intergrade which I had not expected to see, combining the colouring on both surfaces of *T. loandicus* with the pattern of *T. omphaloides*.

39. *TERACOLUS THRUPPI*, sp. n. (Plate XLVII. fig. 10.)

♂. Allied to *T. दौरا* and *T. yerburii*, but the primaries in their markings more like *T. suffusus* of Angola. Milk-white, costal border slightly greyish, the margin narrowly black; apical third to first median branch occupied by a black-brown triangular patch enclosing a lunate orange patch composed of six more or less elongated spots divided only by the black veins; outer margin towards external angle narrowly dusky; a broad blackish internal band from base to external third, and widest in the middle; secondaries with the basicostal third (excepting upon the abdominal area) blackish; external border from submedian vein to apex broadly blackish, interrupted on the median and submedian interspaces by squamose white marginal spots; body black, tegulae with whitish and greyish fringe. Primaries below white, discoidal area sulphur-yellow, irrorated in front with grey; a large and almost semicircular subapical orange patch, its inner border slightly sordid, bounded outwardly by a broad greenish external border which terminates on the first median interspace; internal band broader than above, grey, becoming blackish at the outer extremity: secondaries white, the basicostal third pearl-grey suffused with pale sulphur-yellow, which gives it a greenish tint; basal half of costal margin deep orange; a dusky oblique costal dash terminating the basicostal area; a small fusiform orange spot dotted with black at the end of the cell; external border pale yellowish, bounded internally by an unequal diffused olive-brownish band: body below white. Expanse of wings 36 millim.

♀. Primaries narrower, more rounded, the subapical patch replaced by a very oblique orange band composed of four elliptical sections separated only by the veins, and bounded internally by a narrow line of black, so that the apical area is decidedly smaller and its inner edge has a more defined angle than in the male; fringe white instead of black; internal blackish band of nearly equal width throughout: secondaries much shorter, with six unequal black marginal spots, the second and third large and followed by a grey submarginal band, so as to enclose four reniform pale yellowish spots between the black marginal spots: under surface yellower, the olive greenish apical area of primaries replaced by pale sulphur-yellow sparsely irrorated with grey, the orange band narrower, clearer in colour and more oblique, the secondaries sulphur-tinted throughout, with the basal area irrorated with grey, the discocellular spot better defined, and the submarginal band grey instead of olive-brownish. Expanse of wings 31 millim.

One male, two females, January 2nd.—*Thrupp*.

40. *TERACOLUS JAMESI*, sp. n.

♀. Allied to *T. phlegetonia*, *T. minans*, *T. interruptus*, and *T. friga*; but at once distinguished by its smaller size, the absence of a black

discoellular dot on the primaries, the position of the nebulous grey discal band on the secondaries, which is much further from the outer margin, and the paler and more delicate colouring on both surfaces. Its general aspect is that of *T. friga* (P. Z. S. 1876, pl. vi. fig. 5, ♀); but, in addition to the absence of the discoellular dot, the wings are whiter, the oblique subapical band is narrower, more oblique than in the figure, bounded throughout with orange, the outer border is more acutely dentated and terminates in a small black spot; the internal streak extends from the base, is grey throughout; the spot on the disk of secondaries is continued as a streak tapering to the submedian vein, and the marginal border is replaced by six blackish spots: on the under surface it is quite different, being similar to, but much paler than, the female of *T. eione*. Expanse of wings 28–33 millim.

Two females.—*Thrupp*.

There is not the least doubt that many Lepidopterists who did not possess abundant material would have put down *T. jamesi* as the female of *T. thruppii*, overlooking the differences between the sexes of that species, and regarding them all as males; yet there can be no question that it belongs to a different subgroup, the males of which invariably have a transverse blackish discal spot or dash upon the orange apical area, as in *T. friga*, ♂ (see figure in P. Z. S. 1876); whereas the females of the *T.-daira* group nearly resemble the males, both having the orange apical patch bounded internally by a black line, stripe, or band.

41. *TERACOLUS PHILLIPSI*, sp. n. (Plate XLVII. fig. 11.)

Nearly allied to *T. evarne*. The male differing in its pure white colour, smaller and less brilliant orange apical patch, with much narrower sulphur-yellow edging, the very narrow black margin to the primaries, absence of marginal spots in the secondaries; primaries below white instead of sulphur-yellow, the apical patch sulphur-yellow, with pale pink inner edging instead of creamy ochraceous, and with three well-defined subapical brown dots in an oblique series: secondaries creamy white, shorter than in *T. evarne*, with only the costa slightly yellowish. The female differs above in its whiter colouring, much better-defined black markings, the subapical spots forming a continuous irregular stripe, the much smaller orange apical area, and the entirely different coloration of the under surface, which closely resembles that of *T. eucharis* ♀. Expanse of wings, ♂ 42 millim., ♀ 40 millim.

One male and three females.—*Thrupp*.

Var. *a*. Smaller; the orange apical area of male narrower, with concave rather than convex inner edge, the black border reduced to a few apical marginal dots; under surface of primaries with the subapical dots reduced to two, and orange instead of brown; the female altogether paler, with smaller black markings, the subapical spots separate as in *T. evarne* ♀, the apical area only irrorated with orange, so that it appears to be flesh-coloured; the under surface altogether whiter (but occasionally with pinkish secondaries),

with less strongly-defined markings. Expanse of wings, ♂ ♀ 37 millim.

One male and three females.—*Thrupp*.

Two males. Duder, 26th April, 1884.—*Yerbury*.

Var. *b*. Still smaller, the male with apical patch as in the type, but more broadly bordered internally with sulphur-yellow; black marginal edging only indistinctly seen with the help of a lens; under surface of primaries as in var. *a*, of secondaries pale pink with base of costa orange: the female with the apical patch much paler than in var. *a*, the marginal spots wanting, the discal spots ill-defined; the markings of the secondaries obsolete, the markings of the under surface faintly indicated in olivaceous, instead of deep brown, the secondaries pink-tinted. Expanse of wings, ♂ ♀ 35 millim.

One male, two females, 2nd January.—*Thrupp*.

The three forms which I here associate under one specific name are doubtless representatives of the three supposed species taken by Col. Swinhoe in Bombay, viz. *T. pseudevanthe*, *T. titea*, and *T. eucharis*; whether they are distinct or not can be decided only upon the spot by careful successive experiments in breeding. Therefore, whilst I refrain from asserting that the Indian types are mere varietal forms, I equally refrain from separating as species the three gradational types found in Somali until more is known concerning them. The male of the form taken by Major Yerbury (var. *a*) somewhat resembles Klug's figure of *T. liagore* ♂; his supposed female is a male of a distinct species allied to *T. glycera*.

#### 42. TERACOLUS NOUNA.

*Anthocharis nouna*, Lucas, Expl. Algér., Zool. iii. p. 350, n. 14, pl. 1. fig. 2 (1849).

One male. Bunder Maria, 27th April, 1884.

This is evidently a wide-ranging species. Major Yerbury obtained only one example on the Somali coast; it agrees in all respects with males from Aden, excepting that the orange subapical dash on the under surface of the primaries is a little less red in tint.

#### 43. CATOPSILIA HYBLÆA.

♀. *Callidryas hyblæa*, Boisduval, Sp. Gén. Léop. p. 612, n. 11 (1836).

♂ ♀. *Catopsilia hyblæa*, Butler, P. Z. S. 1884, p. 487.

♂ ♀. More than eighty miles south of Berbera.—*Lort-Phillips*. Three males and one female obtained.

#### 44. CATOPSILIA ALEURONA.

♀. *Catopsilia aeurona*, Butler, Ann. & Mag. Nat. Hist. ser. 4, vol. xviii. p. 489 (1876); ♂, P. Z. S. 1884, p. 487.

♂ ♀. Less than eighty miles south of Berbera.—*Lort-Phillips*.

These two species of *Catopsilia* were taken with the fingers whilst settling near water; of the latter species only a single rather worn pair was obtained.

## 45. BELENOIS LORDACA.

*Pieris lordaca*, Walker, Entom. v. p. 48.

Three males, two females. 2nd January.—*Thrupp*.

Only one male was taken less than eighty miles south of Berbera.

## 46. SYNCHLOE DISTORTA, sp. n. (Plate XLVII. fig. 12.)

♀. Pale sulphur-yellow; all the nervures above greyish, owing probably to the semitransparency of the wings, which allows the pattern of the under surface to be seen; costal margin of primaries blackish; a cuneiform and somewhat curved black patch at the end of the cell, uniting on the third median branch with the apical border, which is formed as in *S. hellica*, and encloses similar oval spots of the ground-colour; the black spot below the first median branch of *S. hellica* is here only indicated by a minute blackish dot, and the secondaries show no more of the dentate-sinuate submarginal line than in the male of that species. Below, the wings are decidedly yellower than above; all the veins are grey-brown irrorated with yellow, which gives them an olive tint: primaries with the patch at the end of the cell formed as above, confluent, with a greyish basicoastal border, not black as above, but greyish sprinkled with yellow atoms; two paler but similarly coloured patches, representing the inner portion of the apical border, but placed further from the margin than in *S. hellica*; submedian dot rather larger than above: secondaries with the veins more broadly bordered than on the primaries, and connected by a submarginal dentate-sinuate yellow-sprinkled grey stripe. Expanse of wings 33 millim.

One female. More than eighty miles south of Berbera.—*Thrupp*.

Only one female was obtained, which, from its small size and narrow wings, I at first imagined to be only a starved specimen of some well-known species. Upon comparing it, however, with *S. hellica* and allies, it is clearly seen to be perfectly distinct, the dark veins of the primaries being peculiar to it. The specimen is in all probability somewhat starved, which would account for its small size and narrow wings; but the other characters would be amply sufficient to distinguish it specifically.

## 47. HERPÆNIA MELANARGE, sp. n.

♂. Nearest to *H. tritogenia*: smaller, wings blacker, pale markings of a uniform cream-colour; oblique patch at end of cell less irregular, subapical spots larger; central submarginal spot smaller; dot at extremity of first median interspace obsolete; oblique band from internal margin much narrower, more or less divided above the first median branch; black band from abdominal margin of secondaries differently shaped, widest instead of narrowest at this margin, its inner edge forming a slight regular arch to the subcostal vein; outer border broader; apical area of primaries and whole of secondaries below tinted with pink, the markings bronze-brown (not yellowish brown); the pale bands being narrower, and the darker ones consequently broader than in *H. tritogenia*. Expanse of wings 44 millim.